LAMPIRAN II
PERHITUNGAN

Menghitung Volume Natrium Silikat dan Natrium Aluminat

2.1 Rasio Mol SiO_2/Al_2O_3 = 30 : 1

$$\frac{30\ mol\ SiO2\ x\ BM\ SiO2}{1\ mol\ Al2O3\ x\ BM\ Al2O3} = \frac{30\ mol\ x\ 60{,}086\ ^{gr}/_{mol}}{1\ mol\ x\ 101{,}96\ ^{gr}/_{mol}}$$

$$= \frac{1802{,}58\ gr\ SiO2}{101{,}96\ gr\ Al2O3}$$

a) Volume Na_2SiO_3 $= \frac{m\ SiO2}{\rho\ Na2SiO3}$

$$= \frac{1802{,}58\ gr}{2{,}61\ ^{gr}/_{ml}}$$

$$= 690{,}6436\ ml$$

b) Volume $Na_2Al_2O_4$ $= \frac{m\ Al2O3}{\rho\ Na2Al2O4}$

$$= \frac{101{,}96\ gr}{1{,}5\ ^{gr}/_{ml}}$$

$$= 67{,}9733\ ml$$

2.2 Rasio Mol SiO_2/Al_2O_3 = 35 : 1

$$\frac{35\ mol\ SiO2\ x\ BM\ SiO2}{1\ mol\ Al2O3\ x\ BM\ Al2O3} = \frac{35\ mol\ x\ 60{,}086\ ^{gr}/_{mol}}{1\ mol\ x\ 101{,}96\ ^{gr}/_{mol}}$$

$$= \frac{2103{,}01\ gr\ SiO2}{101{,}96\ gr\ Al2O3}$$

a) Volume Na_2SiO_3 $= \frac{m\ SiO2}{\rho\ Na2SiO3}$

$$= \frac{2103{,}01\ gr}{2{,}61\ ^{gr}/_{ml}}$$

$= 805{,}7509 \text{ ml}$

b) Volume $Na_2Al_2O_4 = \frac{m\ Al2O3}{\rho\ Na2Al2O4}$

$= \frac{101{,}96\ gr}{1{,}5\ ^{gr}/_{ml}}$

$= 67{,}9733 \text{ ml}$

2.3 Rasio Mol $SiO_2/Al_2O_3 = 40 : 1$

$\frac{40\ mol\ SiO2\ x\ BM\ SiO2}{1\ mol\ Al2O3\ x\ BM\ Al2O3} = \frac{40\ mol\ x\ 60{,}086\ ^{gr}/_{mol}}{1\ mol\ x\ 101{,}96\ ^{gr}/_{mol}}$

$= \frac{2403{,}44\ gr\ SiO2}{101{,}96\ gr\ Al2O3}$

a) Volume $Na_2SiO_3 = \frac{m\ SiO2}{\rho\ Na2SiO3}$

$= \frac{2403{,}44\ gr}{2{,}61\ ^{gr}/_{ml}}$

$= 920{,}8582 \text{ ml}$

b) Volume $Na_2Al_2O_4 = \frac{m\ Al2O3}{\rho\ Na2Al2O4}$

$= \frac{101{,}96\ gr}{1{,}5\ ^{gr}/_{ml}}$

$= 67{,}9733 \text{ ml}$

2.4 Rasio Mol $SiO_2/Al_2O_3 = 45 : 1$

$\frac{45\ mol\ SiO2\ x\ BM\ SiO2}{1\ mol\ Al2O3\ x\ BM\ Al2O3} = \frac{45\ mol\ x\ 60{,}086\ ^{gr}/_{mol}}{1\ mol\ x\ 101{,}96\ ^{gr}/_{mol}}$

$= \frac{2703{,}87\ gr\ SiO2}{101{,}96\ gr\ Al2O3}$

a) Volume Na_2SiO_3 = $\frac{m\ SiO2}{\rho\ Na2SiO3}$

= $\frac{2703,87\ gr}{2,61\ ^{gr}/_{ml}}$

= 1035,9655 ml

b) Volume $Na_2Al_2O_4$ = $\frac{m\ Al2O3}{\rho\ Na2Al2O4}$

= $\frac{101,96\ gr}{1,5\ ^{gr}/_{ml}}$

= 67,9733 ml

2.5 Rasio Mol SiO_2/Al_2O_3 = 50 : 1

$\frac{50\ mol\ SiO2\ x\ BM\ SiO2}{1\ mol\ Al2O3\ x\ BM\ Al2O3}$ = $\frac{50\ mol\ x\ 60,086\ ^{gr}/_{mol}}{1\ mol\ x\ 101,96\ ^{gr}/_{mol}}$

= $\frac{3004,3\ gr\ SiO2}{101,96\ gr\ Al2O3}$

a) Volume Na_2SiO_3 = $\frac{m\ SiO2}{\rho\ Na2SiO3}$

= $\frac{3004,3\ gr}{2,61\ ^{gr}/_{ml}}$

= 1035,9655 ml

b) Volume $Na_2Al_2O_4$ = $\frac{m\ Al2O3}{\rho\ Na2Al2O4}$

= $\frac{101,96\ gr}{1,5\ ^{gr}/_{ml}}$

= 67,9733 ml